

Navy Entomologists Team Up to Build Disease Detection Capacity in Honduras

Navy and Marine Corps Public Health Center

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Entomologists from the U.S. Naval Medical Research Unit No. 6 (NAMRU-6) and the Navy Entomology Center of Excellence (NECE) partnered with Joint Task Force-Bravo Medical Element (JTF-B MEDEL) preventive medicine to develop a disease detection capability for the region. This cutting-edge work is supported by the Armed Forces Health Surveillance Board-Global Emerging Infections Surveillance (GEIS).

Lt. Cmdr. Michael Fisher, NAMRU-6 entomology department head, is leading the effort to bring molecular capabilities as well as the latest in DNA sequencing technology to Soto Cano Air Base. As a regional capability, this technology will allow personnel to rapidly determine if locally-collected ticks, sandflies and mosquitoes are carrying pathogens of disease importance that can threaten the joint warfighter, Honduran Armed Forces and civilian populations.

“The DNA sequencing technology we propose is highly flexible, ideal for far-forward field sites and can produce results in less than 24 hours,” said Fisher. “This has the potential to provide actionable data that can immediately alert the regional public health authorities to prevent large outbreaks and provide commanders a risk assessment threat to their troops.”

Leishmaniasis, malaria, dengue and Chagas disease are a few of the diseases known to be present in Honduras.

The ongoing, long-term collaboration between JTF-B MEDEL preventive medicine and the Ministry of Health in the Comayagua district was instrumental in identifying where this new capability can strengthen the public health in the region, building on previous assistance in testing water quality, and the need for rapid, near real-time diagnostics of disease vectors.

“I was really impressed with the level of organization of their public health vector surveillance system,” said Hospital Corpsman 3rd Class Joshua Nieto of NECE. “They have a good network of personnel at the district level collecting insects and relaying the results back to the ministry’s headquarters in Comayagua. The piece that is missing is knowing if these insects pose a risk to human health and if so, what.”

During the week the team used a variety of techniques to collect over 200 insects that will be analyzed using the DNA sequencing technology by NECE personnel at the USDA’s Center for Medical and Veterinary Entomology in Gainesville, Florida.

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